

Work Order ID 86377

June-27-12 3:50:25 PM

86377

Page 1

Item ID: D205-634-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Replacement Skidtube

Start Date: 27/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 11/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLJDate: 12/06/28 Tooling:

Date:

Run Start ***NR1***

QC:

Date: SPC (Y/N):

Date:

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

Draw Nbr

Revision Nbr

D2580-041

(DEO) Rev.E

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG005

110

0.00

110

BENDING MACHINE - SKIDTUBES

CNC Bend I

Memo

0.00

CNC Delta 100 Bender

1-Bend as per program D2580.C on CNC Bender and Folio 16

2-Cut tubes as per Dwg. D2580

3- scribe batch# in aft end of tube

1 CF 12-8-10

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 120 | | 0.00 | | | | | | | |
| *120* | | | | | | | | | |
| Skidtubes | Memo | 0.00 | | | | | | | |
| Skidtubes | 1- Deburr ends and remove bending marks | | | | | | | | |
| | 2- Prepare tube for welding as per QSI 004 | | | | | | | | |
| 130 | QC5- Inspect part completeness to step on W/O | 0.00 | | | | | | | |
| *130* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |

① SMD 12.08.13

1 8 12/08/13



| W/O: | | WORK ORDER CHANGES | | | | | |
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Cust Item ID:

Required Date: 11/07/2012 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start ***NR1***

QC: Date: SPC (Y/N): Date:

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 140 | | 0.00 | | | | | | | |
| *140* | | | | | | | | | |
| Skidtubes | | | | | | | | | |
| Skidtubes | | | | | | | | | |
| | Memo | 0.00 | | | | | | | |
| | 1-Weld step D2576 as per Dwg. D2580 and QSI 004 A/R Aluminum Rod <i>M122299</i> | | | | | | | | |
| | 2-Grind welds on step as per Dwg D2580 | | | | | | | | |
| | 3- Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x17G to start expansion and finish with 1/2 x 18G to achieve dwg dimention. | | | | | | | | |
| | 4-Drill holes for wearplates using DT 8217 & DT8937, 7.40" from most fwd saddle holes (ref only) Open holes to 19/64", adjust stopper not to hit web.Deburr | | | | | | | | |
| | 6-Drill pilot holes for aft cap using DT 8215Open holes to 0.208". Deburr | | | | | | | | |
| | 7-Drill pilot holes for Tow ring using DT8091, open to .640"and Deburr | | | | | | | | |
| 150 | | | | | | | | | |
| *150* | | | | | | | | | |
| QC | | | | | | | | | |
| Quality Control | | | | | | | | | |
| | QC10- Inspect visual per QSI004- ground welds | 0.00 | | | | | | | |
| | Memo <i>Fwd Cap only</i> | 0.00 | | | | | | | |

BE 12/08/13

SAD 12-08-13

7/6 12-8-14

12/08/14

16

12/08/16

| W/O: | | WORK ORDER CHANGES | | | | | |
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Cust Item ID:

Required Date: 11/07/2012 Req'd Qty: 1.00

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooing:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 160 | QC5- Inspect part completeness to step on W/O | 0.00 | | | | | | | |
| *160* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |
| 170 | Pressure Wash per QSI005 4.3 | 0.00 | | | | | | | |
| *170* | | | | | | | | | |
| HandFinish | Memo | 0.00 | | | | | | | |
| Hand Finishing | Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution. | | | | | | | | |
| 180 | White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum | 0.00 | | | | | | | |
| *180* | | | | | | | | | |
| Powdercoat | Memo | | | | | | | | |
| Powder Coating | START TIME: 10:20 OVEN TEMPERATURE: 320°F FINISH TIME: 10:50 | | | | | | | | |

DAS 16 12/08/16

ML 12/08/16

ML 12/08/16

ml 21841

Dart Aerospace Ltd

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Cust Item ID:

Required Date: 11/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

QC3- Inspect Part Finish

0.00

190

QC

Memo

0.00

Quality Control

1x of 21 12/08/20

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
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Required Date: 11/07/2012 Req'd Qty: 1.00

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Customer:

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Approvals: Process Plan: _____ Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____ Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

200

0.00

200

HandFinish

0.00

Hand Finishing

Memo

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of

Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291 14122443Sikaflex expire date: 13103

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive

A/R Sikaflex-291 14122443Sikaflex expire date: 13103

5-Wing Walk as per Dwg D2580 and QSI 005 4.4

Batch: 141225001x 4 Jul 10 2012

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

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Start Date: 27/06/2012 Start Qty: 1.00

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Cust Item ID:

Required Date: 11/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

210

QC5- Inspect part completeness to step on W/O

0.00

210

QC

Memo

0.00

DAS 16 2-23 12/06/12

Quality Control

Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

220

0.00

220

Packaging

Packaging

Memo

0.00

PPD 81301

12/8/23

Packaging

Identify and pack for shipping as per PPPD205-634-041

Location: _____

PPP Rev: _____

230

QC21- Final Inspection - Work Order Release

0.00

230

QC

Memo

0.00

MLJ 12/08/23

Quality Control

CMF 12-08-23

| W/O: | | WORK ORDER CHANGES | | | | | |
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NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 86377

86377

Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 27/06/2012

Required Date: 11/07/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30
 KJ IPP Rev P 10.02.19
 per PAR09-043 EC verified by:DD
 IPP Rev. O 06.02.28 Added paperwork EC
 IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q
 10.12.01 as per chg003 DD verf:EC IPP REV:R 12.01.23 AS
 PER ECN11-684 VERF:EC

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| D4202-1 *D4202-1* Spacer | | Manufactured | No | | | 140 | Each | 224.0000 | 20 | 20 | | | |
| ** | | | | | | | | | | | | | |

Location Loc Qty Loc Code

LG 184
 77727 5
 83263 179
 LG002 40
 78806 6
 79810 34

D2580-1
 D2580-1
 205 Skidtube bent detail

Manufactured No

85453
 87948
 110 Each 12.0000 1

**

Location Loc Qty Loc Code

LG 12
 76570 2
 77679 2
 85892 4
 85894 4

88570

1

26 12-8-13

CF 12-8-10

Dart Aerospace Ltd

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Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

86377

D205-634-041

Start Date: 27/06/2012

Required Date: 11/07/2012

Start Qty: 1.00

Required Qty: 1.00

D2576-3

Manufactured No

140

Each

68.0000

1

1

D2576-3

Step (maching detail)

**

SEP 08/13

Location

Loc Qty

Loc Code

LG

68

74136

16

82257

52

D2855

Manufactured No

200

Each

19.0000

1

1

D2855

Cap

**

Yl 12/08/20

Location

Loc Qty

Loc Code

FP002

19

65519

2

73347

14

75074

3

AN3-5A

Purchased No

200

Each

808.0000

2

2

AN3-5A

Bolt

**

Yl 12/08/20

Location

Loc Qty

Loc Code

ST350

808

115371

46

117423

124

119355

200

120187

432

121185

6

AN960JD10L

NAS1149D0332J

Purchased

No

200

Each

0.0000

2

2

*AN960.ID10I * *

Washer

11 121708

**

(2x) Yl 12/08/20

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Shop Packet Print

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| W/O: | | WORK ORDER CHANGES | | | | | |
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Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

86377

D205-634-041

Start Date: 27/06/2012

Required Date: 11/07/2012

Start Qty: 1.00

Required Qty: 1.00

ALS7-1032-130

Purchased

No

200

Each

1,998.000

50

50

AI S7-1032-130

Insert

**

HL 12/08/20

Location

Loc Qty

Loc Code

ST280

51

KA122474

X50

117717

27

118966

22

119775

2

ST282

1947

119530

73

120181

12

121444

1862

AN3C4A

Purchased

No

200

Each

4,762.000

50

50

AN3C4A

BOLT

**

HL 12/08/20

Location

Loc Qty

Loc Code

ST350

4762

120187

31

120521

28

120769

38

121205

657

121556

8

122151

4000

X50

AN960C10L

NAS1149C0332

Purchased

No

200

Each

21.0000

50

50

*AN960C10I *✕

washer

**

HL 12/08/20

Location

Loc Qty

Loc Code

ST

21

107534

21

MA122063

X50

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Shop Packet Print

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Dart Aerospace Ltd

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Work Order ID: 86377

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

86377

D205-634-041

Start Date: 27/06/2012

Required Date: 11/07/2012

Start Qty: 1.00

Required Qty: 1.00

D3566-13

Manufactured No

200

Each

57.0000

1

1

D3566-13

Gasket

**

yl 12/08/20

Location

Loc Qty

Loc Code

FP

10

83351

10

FP002

47

76947

2

84880

45

XT

D3566-5

Manufactured No

200

Each

77.0000

1

1

D3566-5

Gasket

**

yl 12/08/20

Location

Loc Qty

Loc Code

FP

35

82275

10

86241

25

FP002

42

80374

3

82274

6

84881

33

1388821

Y1

D3566-1

Manufactured No

200

Each

94.0000

2

2

D3566-1

Gasket

**

yl 12/08/20

Location

Loc Qty

Loc Code

FP

-32

FP002

126

68924

2

80919

2

81619

3

83898

15

84879

72

1387442

Y2

June-27-12 3:50:29 PM

Shop Packet Print

Page 4

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

Picklist Print

June-27-12 3:50:29 PM

Page 5

Work Order ID: 86377

86377

Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 27/06/2012

Required Date: 11/07/2012

Start Qty: 1.00

Required Qty: 1.00

D3564-11

Manufactured No

200

Each

39.0000

1

1

D3564-11

Wearshoe

**

Y1 12/10/20

Location

Loc Qty

Loc Code

FG

5

385473

Y1

77056

5

FP001

34

83910

22

84871

12

D3564-13

Manufactured No

200

Each

48.0000

1

1

D3564-13

Wearshoe

**

Y1 12/08/20

Location

Loc Qty

Loc Code

FP001

2

71594

1

77610

1

FP002

46

82249

22

85512

24

D3564-9

Manufactured No

200

Each

41.0000

1

1

D3564-9

Wearshoe

**

Y1 12/08/20

Location

Loc Qty

Loc Code

FG

4

76950

4

FP001

37

67590

4

69943

1

82255

7

84870

25

386236

Y1

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

June-27-12 3:50:29 PM

Page 6

Work Order ID: 86377

86377

Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 27/06/2012

Required Date: 11/07/2012

Start Qty: 1.00

Required Qty: 1.00

D3564-5

Manufactured No

200

Each

61.0000

1

1

D3564-5

Wearshoe

**

yl 12/08/20

Location

Loc Qty

Loc Code

FG

2

34806

2

FP001

59

77609

1

80343

1

82254

8

84869

25

85475

24

yl

D2594-3

Manufactured No

200

Each

2,396.000

16

16

D2594-3

O-Ring, 205 Skidtube

**

yl 12/08/20

Location

Loc Qty

Loc Code

FP001

2396

65518

41

79496

984

79573

50

79755

1321

yl

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

June-27-12 3:50:29 PM

Page 7

Work Order ID: 86377

86377

Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 27/06/2012

Required Date: 11/07/2012

Start Qty: 1.00

Required Qty: 1.00

D2594-1

Manufactured No

200

Each

699.0000

16

16

D2594-1

**

M 12/08/20

Plug, 205 Skidtube

Location

Loc Qty

Loc Code

FP001

84

B85454

V16

73401

30

74442

6

79495

48

FP-A

615

73401

0

78590

205

84951

410

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

| LIST OF MATERIALS | | | | | |
|-------------------|-------------|-------------|-------------|---|--------------------|
| ITEM | QTY -041 | QTY -045 | QTY -047 | PART NUMBER | DESCRIPTION |
| 1 | X | | | D2580-041 | SKIDTUBE ASSEMBLY |
| 2 | | X | | D2580-045 | SKIDTUBE ASSEMBLY |
| 3 | | | X | D2580-047 | SKIDTUBE ASSEMBLY |
| 4 | 1 | 1 | 1 | D2500-1-190 | EXTRUSION |
| 5 | | | 16 | D2570 | BUSHING |
| 6 | 1 | 1 | 1 | D2576-3 | STEP |
| 7 | 20 | 24 | 25 | D2579 | SPACER |
| 8 | 16 | 16 | 8 | D2594-1 | PLUG |
| 9 | 16 | 16 | 8 | D2594-3 | O-RING |
| 10 | 1 | 1 | 1 | D2596 | 205 WEB |
| 11 | 1 | 1 | 1 | D2855 | AFT CAP |
| 12 | 1 | 1 | | D3564-5 | WEARSHOE |
| 13 | 1 | 1 | | D3564-9 | WEARSHOE |
| 14 | 1 | 1 | | D3564-11 | WEARSHOE |
| 15 | 1 | 1 | | D3564-13 | WEARSHOE |
| 16 | 2 | 2 | | D3566-1 | GASKET |
| 17 | 1 | 1 | | D3566-5 | GASKET |
| 18 | 1 | 1 | | D3566-13 | GASKET |
| 19 | | | 1 | D4406-041 | WEARPLATE ASSEMBLY |
| 20 | | | 1 | D4406-043 | WEARPLATE ASSEMBLY |
| 21 | 50 | 50 | | ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130 | INSERT |
| 22 | 50 | 50 | | AN3C4A | BOLT |
| 23 | 2 | 2 | 2 | AN3-5A | BOLT |
| 24 | | | 8 | AN4-45A | BOLT |
| 25 | 50 | 50 | | NAS1149C0332R | WASHER (AN960C10L) |
| 26 | 2 | 2 | 2 | NAS1149D0332J | WASHER (AN960J10L) |
| 27 | | | 8 | MS21042-4 | NUT (OR MS21042L4) |

GENERAL NOTES:

- 1) MATERIAL N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY (-041/-047) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
POWDER COAT ASSEMBLY (-045) GREEN SANDEX (REF 4.3.5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 34.5 lbs
D2580-045 = 34.5 lbs
D2580-047 = 37.7 lbs
- 8) WELDING PER DART QSI 004
- 9) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE
- 11) USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/291.
- 12) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

DEO ATTACHED

RELEASED

2011-08-29

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE

WORK ORDER
NO 86377 MLJ
12/06/28

| | | | |
|------------|---|----|----------|
| E | ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS TD2577-205 (ZN C4-1) | RF | 11.06.21 |
| D | CHANGE TO SS WEARPLATES AND GASKETS. INCLUDE DEO 9124/9183 | PH | 07.04.05 |
| C | REDRAWN, INCLUDED DEO 9094/9097 | CP | 98.08.26 |
| B | AS MANUFACTURED | DS | 96.12.02 |
| A | NEW ISSUE | DS | 96.09.16 |
| REV. | DESCRIPTION | BY | DATE |
| DESIGN | # | | |
| DRAWN | RF | | |
| CHECKED | 10 | | |
| MFG. APPR. | 10 | | |
| APPROVED | 10 | | |
| DE APPR. | 10 | | |
| DATE | 11.06.21 | | |

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. REV. E
D2580 SHEET 1 OF 8
TITLE SCALE
205 SKIDTUBE ASSEMBLY NTS

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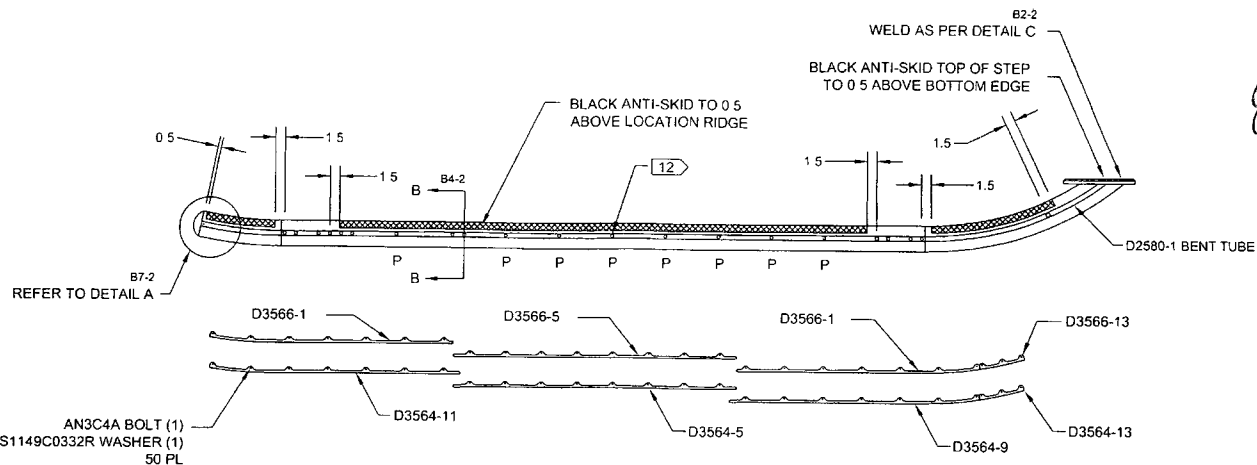
| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

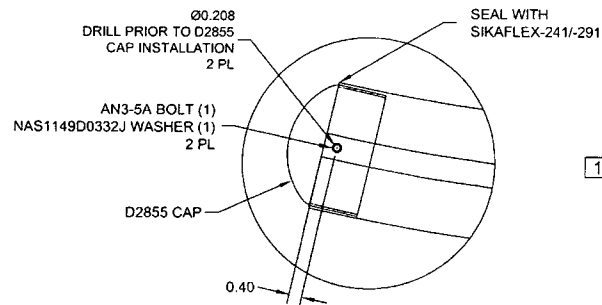
| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
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NOTE: Date & initial all entries

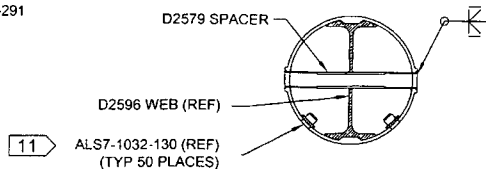


D2580-041 ASSEMBLY DETAIL

DETAIL A C7-2
SCALE 5X

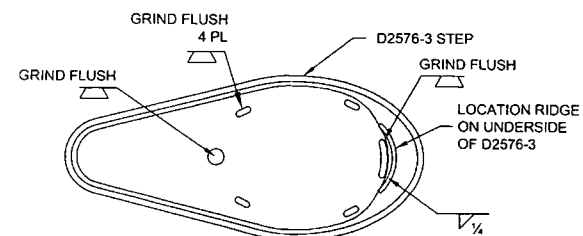


D5-2
SECTION B-B
SCALE 5X



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY.
1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

DETAIL C D3-2
SCALE 5X



| | | | |
|-----------|----------|---|--------------|
| DESIGN | # | DART AEROSPACE LTD | |
| DRAWN | RF | HAWKESBURY, ONTARIO, CANADA | |
| CHECKED | 10 | DRAWING NO. | REV. E |
| MFG APPR. | 11 | D2580 | SHEET 2 OF 8 |
| APPROVED | 12 | TITLE | SCALE |
| DE APPR. | 13 | 205 SKIDTUBE ASSEMBLY | NTS |
| DATE | 11.06.21 | <small>COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small> | |

86377

DEO ATTACHED

RELEASED

2011-08-29

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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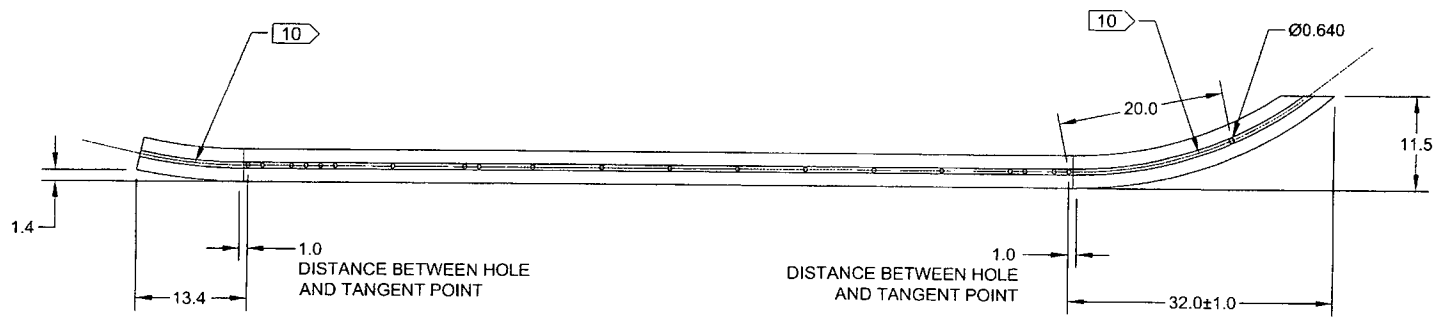
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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NOTE: Date & initial all entries

86377



D2580-1 BENT TUBE
(MAKE FROM D2580-101 TUBE)

DEO ATTACHED

RELEASED
2011-08-28
JW

| | | | |
|------------|----------|---|--------------|
| DESIGN | # | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | | |
| CHECKED | 140 | DRAWING NO. | REV. E |
| MFG. APPR. | 140 | D2580 | SHEET 3 OF 8 |
| APPROVED | 140 | TITLE | SCALE |
| DE APPR. | 140 | 205 SKIDTUBE ASSEMBLY | NTS |
| DATE | 11.06.21 | <small>COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small> | |

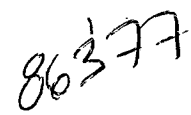
| W/O: | | WORK ORDER CHANGES | | | | | |
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| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

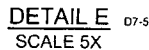
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|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
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NOTE: Date & initial all entries

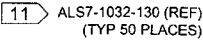


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RELEASED
2011-08-29
MP



D5-5



Technical drawing of a boat hull cross-section. The drawing includes the following labels and dimensions:

- DETAIL G** (Title)
- SCALE 5X** (Scale)
- D3-5** (Reference code)
- GRIND FLUSH** (Label for the top edge of the hull)
- GRIND FLUSH 4 PL** (Label for the top edge of the hull, with a dimension of 4 PL)
- D2576-3 STEP** (Label for the step in the hull structure)
- GRIND FLUSH** (Label for the bottom edge of the hull)
- LOCATION RIDGE ON UNDERSIDE OF D2576-3** (Label for the ridge on the underside of the hull structure)
- 1/4** (Dimension for the thickness of the hull structure)

DETAIL G D3-5
SCALE 5X

| | | | |
|-----------|---------------|--|--------------|
| DESIGN | 4 | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D2580 TITLE 205 SKIDTUBE ASSEMBLY COPYRIGHT © 1994 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRINTED FOR THE EXPRESS CONSENT THAT IT MAY BE USED FOR ANY PURPOSE OR COME ON COMMERCE TO ANY OTHER PERSON WITHOUT IT BEING REPRODUCED FROM DART AEROSPACE LTD.</small> | REV. E |
| DRAWN | RF | | SHEET 4 OF 6 |
| CHECKED | 10 | | |
| MFG. APPR | 10 | | |
| APPROVED | 10 | | SCALE |
| DE APPR. | 10 | | NT: |
| DATE | 11.06.21 | | |

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| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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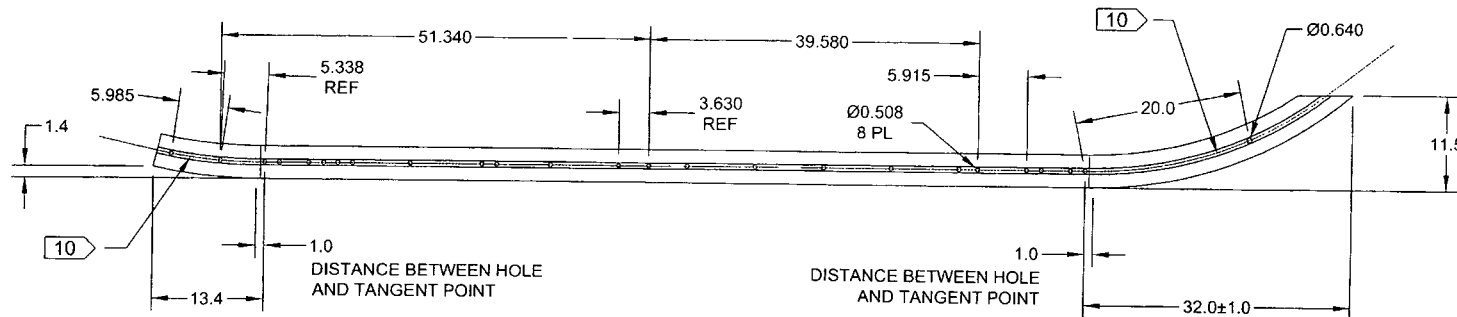
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| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

86377



D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

DEO ATTACHED

RELEASED
2011-08-29

| | | | |
|------------|----------|--|--------------|
| DESIGN | # | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | | |
| CHECKED | AP | DRAWING NO. | REV. E |
| MFG. APPR. | AS | D2580 | SHEET 5 OF 8 |
| APPROVED | AP | TITLE | SCALE |
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| | | | | | | | |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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NOTE: Date & initial all entries

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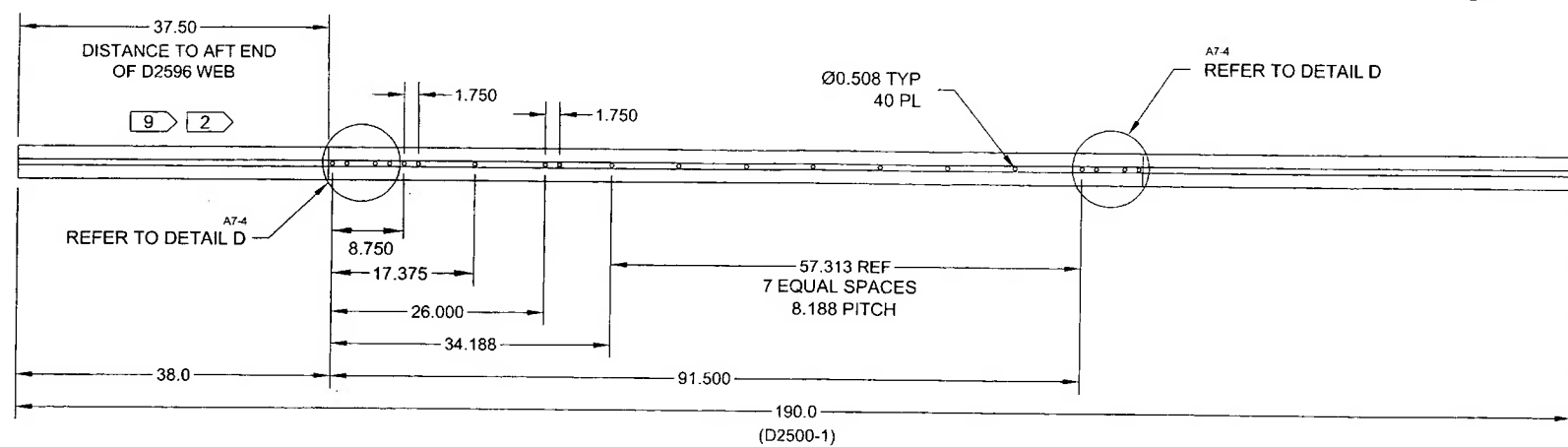
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

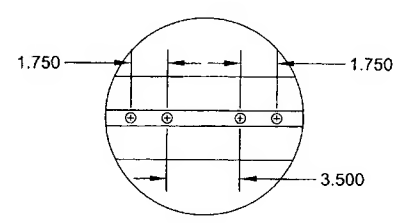
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NOTE: Date & initial all entries

86377



D2580-101 TUBE



DETAIL D D3-4
SCALE 5X C7-4

DEO ATTACHED
RELEASED
2011-08-29

| | | | |
|------------|----------|---|--------------|
| DESIGN | # | DART AEROSPACE LTD | |
| DRAWN | RF | HAWKESBURY, ONTARIO, CANADA | |
| CHECKED | AP | DRAWING NO. | REV. E |
| MFG. APPR. | AP | D2580 | SHEET 8 OF 8 |
| APPROVED | AP | TITLE | SCALE |
| DE APPR. | AP | 205 SKIDTUBE ASSEMBLY | NTS |
| DATE | 11.06.21 | <small>COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> | |

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NOTE: Date & initial all entries

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|----------------------|--------------------------------|-------------------------|---|--------------------------------|---------------------------|--------------|
| DRAWING NO. D2580 | TITLE 205 SKIDTUBE ASSEMBLY | REV. E | DART AEROSPACE LTD ENGINEERING ORDER | D.E.O. NO. D2580-E-1 | SHEET NO. SHEET 1 OF 1 | SCALE NTS |
| DRAWN <i>UP</i> | CHECKED <i>ASS</i> | MFG. APPR. <i>ER</i> | APPROVED <i>[Signature]</i> | DE APPR. <i>[Signature]</i> | | |
| DATE 11.12.13 | DATE 11.12.13 | DATE 11.12.13 | DATE 11.12.13 | DATE 11.12.13 | | |

PURPOSE:

CHANGE ALL C'BORED WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

WAS

| QTY | QTY | QTY | PART NUMBER | DESCRIPTION |
|------|------|------|-------------|-------------------|
| -041 | -045 | -047 | | |
| 20 | 24 | 25 | D2579 | CROSS BOLT SPACER |

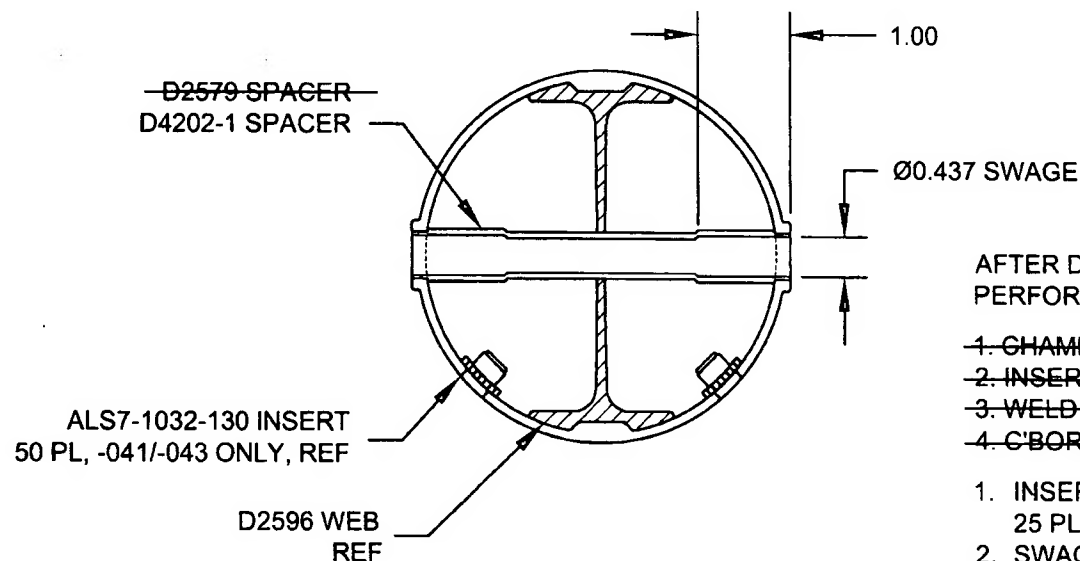
IS

| | | | | |
|----|----|----|---------|-------------------|
| | 4 | | * D2579 | CROSS BOLT SPACER |
| 20 | 20 | 25 | D4202-1 | SPACER |

SECTION B-B, SECTION F-F, & SECTION I-I ARE AMENDED AS FOLLOWS
FOR ALL HOLES THAT WERE ORIGINALLY C'BORED:

*** FOR -045 SKIDTUBE ONLY:**

WELD 4X D2579 SPACERS PER DWG
IN LOCATIONS MARKED "NO C'BORE".
REF SHEET 4 OF DWG.



SECTION B-B, F-F, I-I
NOT TO SCALE

RELEASED
2011-12-14 *[Signature]*

AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

- ~~1. CHAMFER HOLE 0.060 X 45°~~
- ~~2. INSERT D2579 SPACER (20 PLACES)~~
- ~~3. WELD INTO PLACE AND GRIND FLUSH~~
- ~~4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP~~

1. INSERT D4202-1 SPACER, 20 PL (-041) OR 20 PL (-045) OR 25 PL (-047)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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